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Sarbanissa venusta (Leech) and *Sarbanissa yunnana* (Mell) (Lepidoptera, Noctuidae, Agaristinae)—their larvae and the seasonal appearance of the imago

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Abstract The larval stage of *Sarbanissa venusta* (Leech) and the seasonal appearance of the imago are described and compared to *Sarbanissa yunnana* (Mell) in Jizobaru Highland, Oita, Kyushu, Japan. Larvae of both species bore a close resemblance, but their food plants were different. *S. venusta* fed on *Ampelopsis brevipedunculata* Trautv. (Family Vitidaceae), while *S. yunnana* fed on *Impatiens* spp. (Family Balsaminaceae). *S. venusta* appeared only from the end of July to the end of August. On the other hand, *S. yunnana* was apparently represented by two generations, appearing from the end of May to the beginning of July, and from the end of July to the end of August. The larvae of both species showed aggregation habit, but in *S. venusta* the size of the group was sometime very large with more than 70 larvae. I observed a 'leader' in some groups, which was the first to shake its body to threaten an enemy; the other members immediately imitated the act.

Key words *Sarbanissa venusta*, *Sarbanissa yunnana*, Lepidoptera, Noctuidae, Agaristinae, larval stage, aggregation habit, presence of a leader in each larval group of *S. venusta*, food plant, appearance of imago.

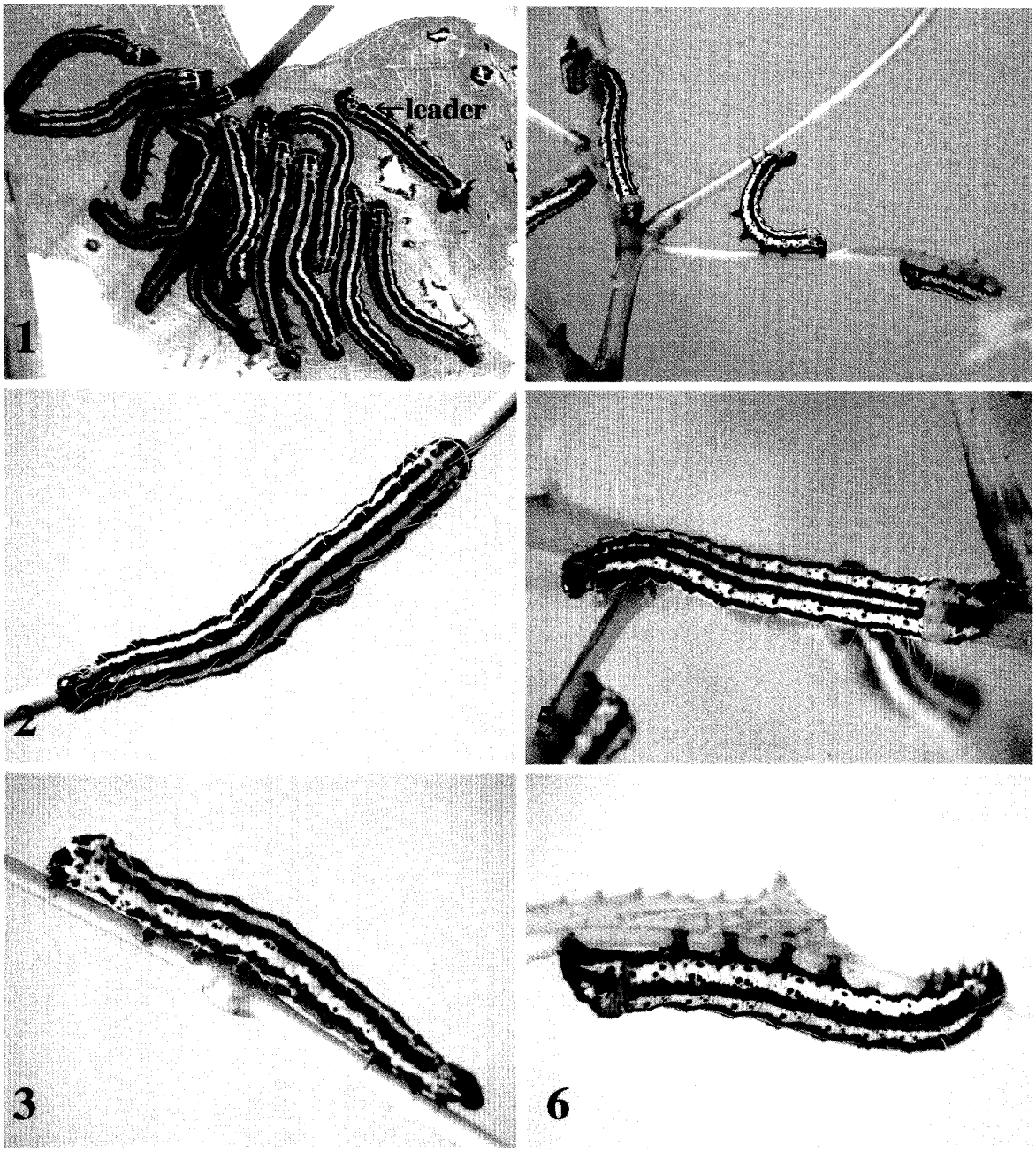
Miyata and Nozaki (1989) described a *Sarbanissa* sp. from Kyushu, Japan based on a female, which emerged from a pupa obtained by rearing larvae found on *Impatiens nolitangere* Linn. (Family Balsaminaceae). Sugi (1991) identified this species as *Sarbanissa yunnana* (Mell), which was known from Yunnan, China. At that time another group of larvae similar to this was found on *Ampelopsis brevipedunculata* Trautv. (Family Vitidaceae). About 70 to 100 larvae, probably *Sarbanissa venusta* (Leech), gathered on a stalk of the plant but I failed to rear them. After thirteen years, I succeeded in rearing larvae on the plant, with two males and a female of *S. venusta* emerging on August 10–15, 2004. During the summer season, the larvae of both species were very difficult to rear in lowland areas such as Oita City and Hazama Town, because of high temperatures and humidity. On the last, successful, occasion, I reared them at the Kokonoe Institute of Natural History, a very cool place with lower humidity situated in Jizobaru Highland.

Since the first record by Miyata and Nozaki (1989), several additional records of *S. yunnana* in Kyushu have been reported by Nakata (1992) and Ohtsuka (1998, 2002).

1. *Sarbanissa venusta* (Leech) (Larva: Figs 1–3, Imago: Figs 7–9)

Larva (Figs 1–3). The larvae of *S. venusta* were discovered on the leaves of *Ampelopsis brevipedunculata* at Jizobaru, Machida, Kokonoe-machi, Kusu-gun, Oita-pref., Japan (about 830 meters above sea level; 33°09′05″N, 131°11′00″E) on September 27, 2003. The larvae formed four small groups, each from 12 to 19 individuals. They had already reached the last instar with body length of 40–45 mm.

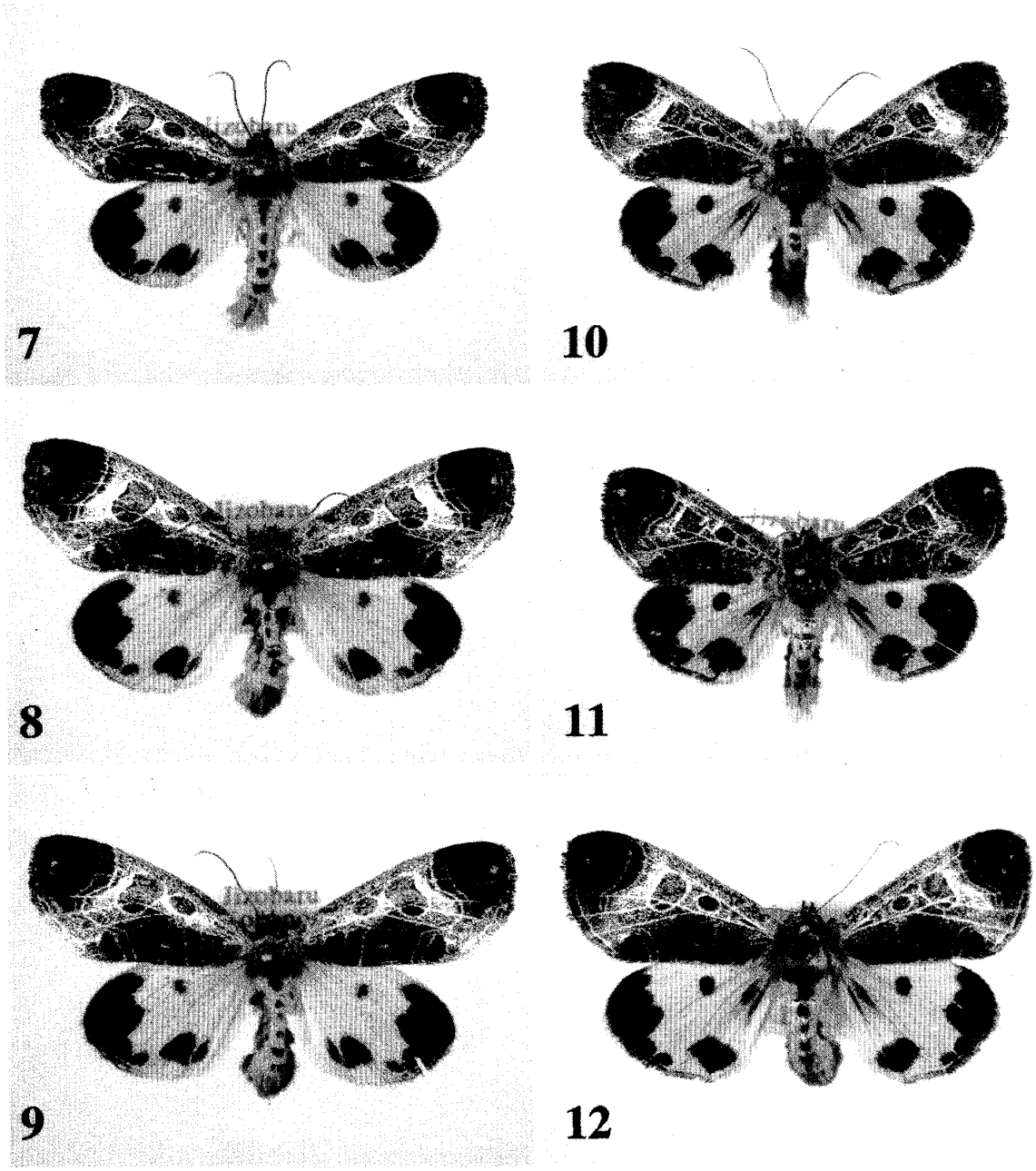
Each group had a 'leader'. When disturbed by the observer, the 'leader' (for example, the right end of the group in Fig. 1) bent its head backward and started shaking its body, then all members followed suit. The motion progressed from the right to the left end immediately. I removed the leaf with the larvae, and put them into a box to rear. After dark, the group



Figs 1–6. Last instar larvae of *Sarbanissa* species. 1–3. *S. venusta.* 4–6. *S. yunnana.*

broke up to feed on other leaves individually. Later they returned to the same leaf, which none of them fed on, and formed a line just as before. It was impossible to tell whether the 'leader' assumed its former position or a different individual occupied the right end. From my observations of two groups in 1981 near Asaji Town, Oita pref. and in 1988 at Mt Ryozen, Oita City, the group size of the larvae was very big and the number of larvae was about 70 to 100 individuals (Miyata and Nozaki, 1989).

Two to three days later, all the larvae excavated and crept into decayed wood of *Quercus acutissima*, and became pupae. The first imago (♀) of *S. venusta* emerged on August 10, 2004. Two males emerged on August 15, 2004.



Figs 7–12. Adults of *Sarbanissa* species. 7–9. *S. venusta* (7. ♂, expanse of fore wings (abbreviation: EFW) 41 mm, Jizibaru, 17. viii. 2004. 8. ♀, EFW 44 mm, Jizobaru, 11. viii. 2004. 9. ♀, EFW 43 mm, Jizobaru, 22. viii. 2004). 10–12. *S. yunnana* (10. ♂, EFW 38 mm, Jizobaru, 13. viii. 2002. 11. ♂, EFW 36 mm, Jizobaru, 12. viii. 2004. 12, ♀ EFW 43 mm, Jizobaru, 26. v. 2004).

Food plant. *Ampelopsis brevipedunculata* Trautv. (Family Vitidaceae).

Seasonal appearance. One generation only appeared from the end of July to the end of August at Jizobaru Highland (Fig. 13).

Distribution. Japan (Hokkaido, Honshu, Shikoku, Kyushu), China.

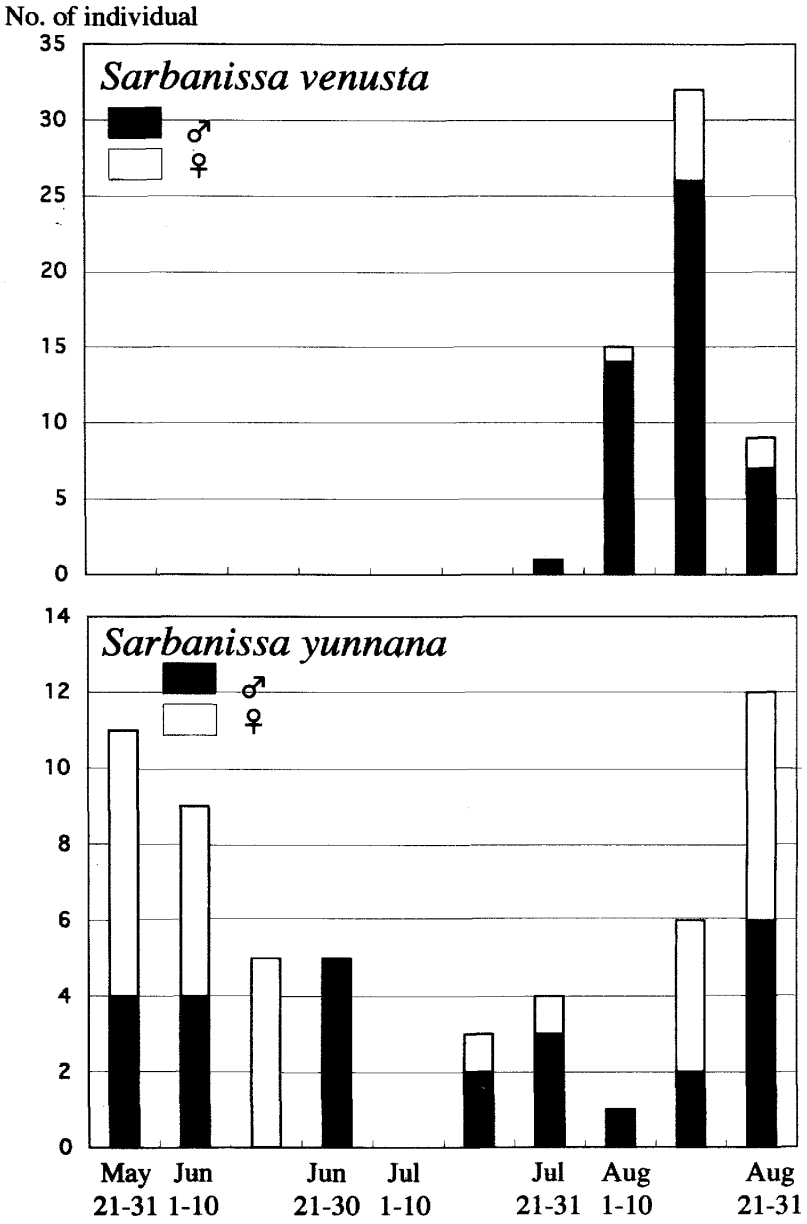


Fig. 13. Number of *Sarbanissa venusta* and *S. yunnana* collected by light trap at Kokonoe Institute of Natural History (Jizobaru, 2001–2004).

2. *Sarbanissa yunnana* (Mell) (Larva: Figs 4–6; Imago: Figs 10–12)

Larva. See Miyata and Nozaki (1988). The larvae of this species also formed a small group (Fig. 4), but the number of larvae was less than ten, because of the size of food plant. The larvae excavated and crept into decayed wood for pupation just as in *S. venusta*.

Food plant. *Impatiens nolitangere* Linn., *I. textori* Miq. and *I. hypophylla* Makino (Family Balsaminaceae).

Seasonal appearance. Apparently twice a year, May to July, and July to August (Fig. 13).

Distribution. Japan, Kyushu: Oita (Shônaichô Mt Kurodake, Yufuinchô, Kujuchô, Kokonoemachi Jizobaru, Asajichô, Naokawason), Miyazaki (Takachihochô Gokashô),

Kumamoto (Yabechô Naidaijin, Takamorichô Yatsuda, Kikuchisuigen, Kuginomura Ohkamigaudo), China (Yunnan, Hubei, Sichuan).

In Japan, the distribution of *S. yunnana* is apparently limited to Kyushu, especially Kuju mountain area higher than about 500 m.

Acknowledgments

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摘　　要

ベニモントラガとツリフネソウトラガ (鱗翅目, ヤガ科, トラガ亜科)—幼虫および成虫の出現期—(宮田　彬)

ツリフネソウトラガ *Sarbanissa yunnana* の発見を報告した論文 (宮田・野崎, 1989) で, ノブドウにつく謎の幼虫について言及し, おそらくそれがベニモントラガ *Sarbanissa venusta* の幼虫であろうと述べた. その後, 長い間調べる機会が無かったが, 大分県九重町地蔵原に移って間もなく2003年9月27日再びノブドウにつく幼虫を発見した. 前2回の遭遇では幼虫は茎に70頭から100頭の大きな群れを作っていた. しかし今回は1本のノブドウに12–19頭からなる小さな4つの群れが見つかった. 群れにはリーダーがおり, 敵を威嚇するときはリーダーが頭を上にそらせ体を震動させると, メンバーが一斉に同じ行動を行った. また摂食の際, 群れは解散したが, 終わると元の葉に戻ってまったく前と同じように並んだ. 地蔵原は海抜約830 mの高原で涼しいためか低地では二度も失敗した幼虫飼育は順調で, 数日でクヌギの朽ち木に潜り込み蛹化した. 2004年8月10日から15日にかけてベニモントラガ2♂1♀が羽化した. ツリフネソウトラガもベニモントラガも地蔵原には多いので, 両種の成虫の発生期を調べた. その結果, ベニモントラガは年1回8月に出現する一化性の種であるが, ツリフネソウトラガは初夏と夏の年2化であることがはっきりした.

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